

WILMINGTON FIRE DEPARTMENT

FILM INDUSTRY GUIDELINES



Approved Production Facility For Studios and On Location

I. General Requirements

1. No smoking on stage at any time unless it is part of the film/video production. Signs shall be posted on the interior and exterior of the stage. This includes during the construction phase of the stage.
2. No flammable liquids or gases may be stored on stage during film/video production. They shall be stored off-stage in an approved cabinet.
3. Minimum four foot (4') aisle (fire lane) around interior of stage.
 - A. This perimeter aisle must be illuminated with no less than one (1) foot-candle at floor level with an approved emergency back-up system in case of power failure.
 - B. Additional emergency lighting and exit lights may be required per the Fire Marshal.
 - C. No obstructions shall be placed in this perimeter aisle without prior approval of the Fire Marshal or his designated agent.
 - D. No electrical installations or equipment shall obstruct exits, egress, or access.
 - E. Aisles shall have a minimum clear unobstructed height of seven feet (7').
4. The set shall be cleared of any personnel not necessary to production if, in the opinion of the Fire Safety Officer, emergency access/egress is not possible due to crowded conditions.

II. Special Permits

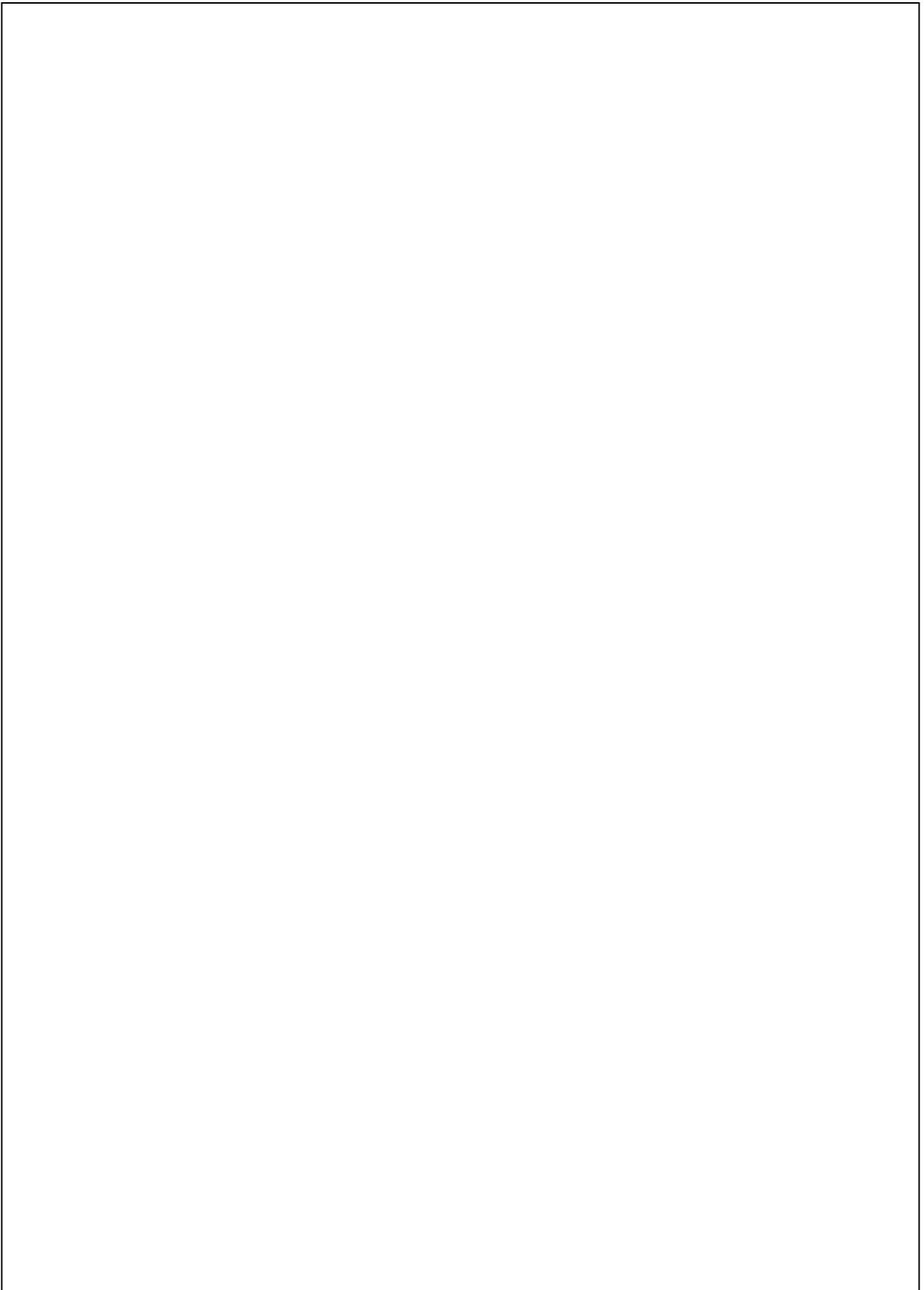
1. A **Special Permit** is required for the use of pyrotechnic special effects, open flame use, use of flammable or combustible liquids and gases, welding, the parking of motor vehicle on stage, temporary obstruction of the perimeter aisles.
2. For a **Special Permit**, contact the Wilmington Fire Department Fire Prevention Bureau at (910) 343-0696.

III. Fire Safety Officer

1. Standby Fire Safety Officers shall be required for all productions where pyrotechnic special effects are used.
2. Where the Fire code dictates, the Fire Chief or his designated agent on a case-by-case basis requires Special Permits shall determine assignment of Fire Safety Officers.

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**WILMINGTON FIRE DEPARTMENT
FIRE SAFETY OFFICER REPORT**

Name of Production/Event: _____

Address: _____

Contact Person: _____

Telephone: _____

These items are the minimum requirements to be enforced at special events, production locations, approved production facilities, and events involving tents and/or canopies.

| | Yes | No | N/A | Corrected |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. Access and Parking | | | | |
| A. Fire Department vehicle access maintained. (20' minimum) 503.2.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. Fire hydrants, sprinkler and standpipe FDC unobstructed. (3' minimum) 508.5.4, 508.5.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Parked or stopped vehicles not blocking exit doors. 1011.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. Special effects truck(s) parked in designated location. 3308.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E. Vehicles parked 20' minimum from any tent. 2403.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Exiting | | | | |
| A. All required exits kept clear and unobstructed. 1011.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. Exit signs (illuminated) provided and visible. 1003.2.10 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Exit pathway illumination provided and operational. 1003.2.11 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. No hazardous or flammable materials near exits. 1011 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E. Minimum 3' aisles and 4' perimeter aisles in Approved Production Facilities. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Electrical and Lighting | | | | |
| A. Cords, cables, boxes, fixtures, and appliances in good condition. 605.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. Cables properly protected, bundled, etc. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Cables flown or bridged crossing exit ways or paths of travel. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. Electrical panels unobstructed with deadfronts or tagged. 605.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| E. Combustible materials kept clear of light fixtures. 112 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Fire Protection Equipment | | | | |
| A. Fire extinguishers charged, tagged, and readily accessible. 906.2, 906.6 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. 40-B:C extinguisher provided for generator and kitchen area. 901.4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Sprinkler system riser, valves, and heads unobstructed. NFPA 13 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| D. Proper extinguishers provided for type of special effects. 901.4.3 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Generators | | | | |
| A. Generator free of fuel leaks and not refueled while operating. 112 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Smoking Control | | | | |
| A. No interior smoking is permitted unless part of performance. 308.3.5 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. "NO SMOKING" signs posted and enforced by responsible party. 310.3, 310.4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. No smoking within 50' of special effects or 25' of flammable liquids. 310.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Heat Producing Appliances | | | | |
| A. Adequate clearance between appliances and combustibles maintained. 112 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Flammable Liquids and Gases | | | | |
| A. Flammable gases & liquids stored in approved containers & identified. 3404.3.2 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| B. No refueling of vehicles or equipment while operating. NFPA 30A | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| C. Spray finishing operations with flammable liquids done in spray booth. 1504.1 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Report Completed By: _____

Owner/Responsible Party Notified: _____

Name: _____ Name: _____

Signature: _____ Date: _____ Signature: _____ Date: _____

Other FSO Comments: _____

I. ACCESS/PARKING

- I.A** Every building shall be accessible to Fire Department apparatus by means of an approved roadway of not less than twenty feet (20') in width, with a clear vertical clearance of thirteen feet, six inches (13'6"). Width may be reduced with Fire Department approval, but **never** less than twelve feet (12') wide.
- I.B** All fire hydrants, fire sprinkler, standpipe, and Fire Department connections (FDC) shall always be accessible by a clear area of at least three feet (3').
- I.C** Parked or stopped vehicles shall not block exit doors.
- I.D** Special effects trucks shall be parked in approved designated areas. Depending on what the vehicle is carrying, i.e. Class C explosives, will dictate how far from a structure or from where a pyrotechnics display takes place. In the case of a pyrotechnic event, all of the related explosives shall be in an approved magazine designed for explosives storage.
- I.E** Parked vehicles shall be a minimum of twenty feet (20') from any tent, canopy, or membrane structure that requires a permit. Exception: Display vehicles under a tent or canopy.

II. EXITING

- II.A** All required exits kept clear and unobstructed. Cables and electrical cords ramped, kept to the side, no storage blocking.
- II.B** Exit signs provided and visible.
1. When the occupant load is fifty (50) or more in permanent buildings, "EXIT" signs shall be illuminated.
 2. Tents shall have "EXIT" signs when the occupant load is fifty (50) or more.
 3. When the occupant load in a tent is one hundred (100) or more, the "EXIT" signs shall be illuminated
- II.C** Exit pathway illumination provided and operational.
1. The four-foot (4') perimeter aisle in an Approved Production Facility (APF) shall be illuminated.
 2. Emergency lighting provided in APFs, and when occupant load is over one hundred (100) in Public Assembly occupancies.
- II.D** No hazardous or flammable materials near exits.
- II.E** Minimum three foot (3') aisle maintained at all times. In Approved Production Facilities and Sound Stages, a four-foot (4') aisle shall be maintained around the perimeter.

III. ELECTRICAL & LIGHTING

- III.A** Cords, cables, boxes, fixtures, and appliances in good condition (not frayed, damaged, or in poor condition).
- III.B** Cables and electrical cords properly protected, bundled, etc. (ramped, flown, protected from physical damage, no water in contact with connection or distribution boxes).
- III.C** Cables flown or bridged crossing exit ways or paths of travel (properly secured or supported, not blocking exit signs). No cables or objects hanging from fire sprinkler piping.
- III.D** Electrical panels unobstructed and deadfronts in place (minimum thirty inches (36") clear to sides and front, cover on if no tap in).
- III.E** Combustible materials kept clear of light fixtures (drapes, curtains, bushes, trees, etc.).

IV. FIRE PROTECTION EQUIPMENT

IV.A Fire extinguishers charged, tagged, and readily accessible (locate extinguisher location[s] and verify indicator arrow is in the GREEN).

IV.B 40-B:C extinguisher provided for large generators and kitchen area. When small portable generators are used, 2A-10:BC extinguishers are acceptable.

IV.C Sprinkler system riser, valves, and heads unobstructed.

1. Heat defusing devices and heat shields may be installed during flame special effects. MUST be removed by the end of the workday.
2. The use of a standpipe system for other than its intended purpose is prohibited. NO filling water tanks and trucks, washing down floor area to clean or for a wet FX, or as a charged hose line for fire protection during flame FX.
3. A fire hydrant may be used for a wet FX and as a water supply for a charged hose line for fire protection during flame FX.
4. Water supply to the sprinkler system may be temporarily shut off during a flame FX to prevent accidental activation if the following conditions are met:
 - a. Central station provider and fire dispatch is notified prior to shut off and reactivation.
 - b. Person with constant communication is stationed by the fire sprinkler control valve during the flame FX to open valve if needed.
 - c. FSO approval after evaluating existing site conditions and anticipated flame FX.

IV.D Proper extinguisher provided for type of special effect (the size and type will depend on what is happening).

V. GENERATORS

V.A Generator parked in approved location, operator on site (not parked under combustible overhangs, not blocking exits, access widths, sprinkler heads, and clear of vegetation).

V.B Generator free of fuel leaks and not refueled while operating.

TYPES:

Tractor Mounted
Trailer Mounted
Gasoline/Diesel most common

GALLONS/HR Average:

Gasoline: 6 gallons/hr. Avg.
Diesel: 4.7 gallons/hr. Avg.

RUNNING TIME:

Tractor Mounted = SEVERAL DAYS
Trailer Mounted = 12 HOURS

CHARACTERISTICS:

Tractor mounted units carry 150 to 300 gallons of fuel. In addition, the fuel tanks are normally providing fuel to the tractor as well as the generator.

Trailer units carry 80 to 150 gallons of fuel.

90% of all generators are run by diesel fuel.

When any metal part of a generator comes in direct contact with the ground, it shall have an earth grounding rod driven 8' into the ground, and bonded to the generator with cables and clamps.

SIZE:

200, 500, 750, 1000, & 1200 amps

750 amp generators are the most common

POWERHOUSE:

Industry safety guidelines recommend that a generator over 200 amps have a qualified generator operator on site.

EMERGENCY FEATURES:

All units have kill switches to seize the power in case of an emergency.

All units will automatically shut down when the following conditions exist:

1. Low oil level
2. Low water level
3. High water pressure
4. Over speed
5. Over current surge

VI. SMOKING CONTROL

- VI.A** NO INTERIOR SMOKING is permitted unless part of performance (enforced by responsible party on site).
- VI.B** "NO SMOKING" signs posted and enforced.
- VI.C** No smoking permitted near special effects or flammable liquids (fifty feet [50'] for pyrotechnic and flame FX and twenty five feet [25'] for flammable liquids minimum clearance to any smoking).

VII. HEAT PRODUCING APPLIANCES

- VII.A Listed.** Temporary heating devices shall be listed and labeled in accordance with the *International Mechanical Code* or the *International Fuel Gas Code*. Installation, maintenance, and use of temporary heating devices shall be in accordance with the terms of the listing.
- VII.B Oil-fired heaters.** Oil-fired heaters shall comply with Section 603 of the *Fire Prevention Code*.
- VII.C LP-gas heaters.** Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with NFPA 58 and the *International Fuel Gas Code*.
- VII.D Refueling.** Refueling operations shall be conducted in accordance with Section 3405 of the *Fire Prevention Code*. The appliance shall be allowed to cool prior to refueling.
- VII.E Installation.** Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement, or overturning in accordance with the manufacturer's instructions.
- VII.F Supervision.** The use of temporary heating devices shall be supervised and maintained only by competent personnel.

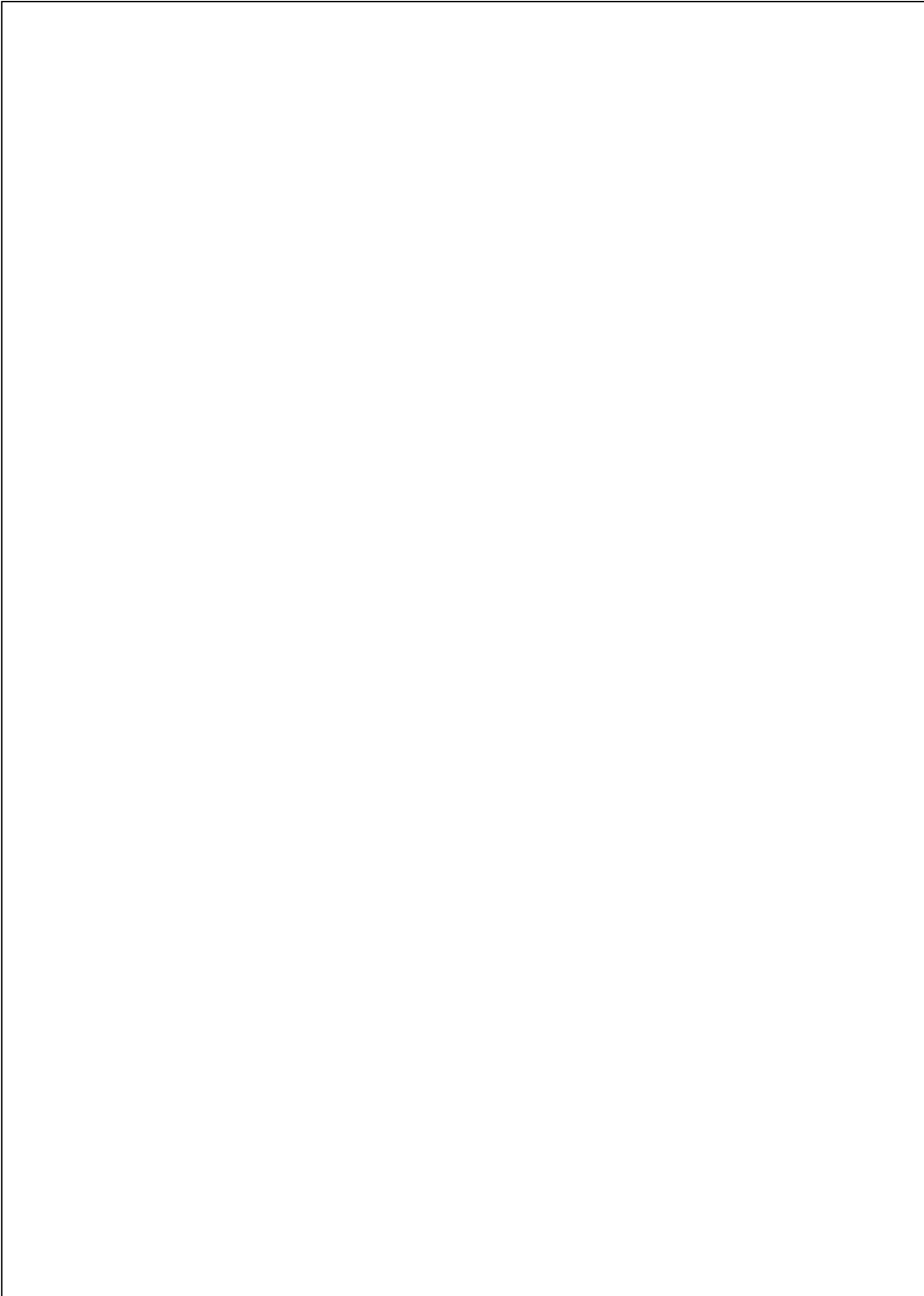
VIII. FLAMMABLE LIQUIDS AND GASSES

VIII.A Flammable gasses and liquids stored in identified and approved containers.

1. Gas cylinders adequately secured to prevent falling.
2. Compressed gas cylinders designed for protective caps shall have the cap in place **except** when in use.
3. Flammable liquids in approved containers either metal or plastic.

VIII.B No refueling of vehicles or equipment while operating.

VIII.C Spray finishing operations with flammable liquids shall be in a spray booth if conducted inside a building (is the liquid being used flammable?)



Wilmington Fire Department Approved Production Facility Worksheet

This worksheet is intended to assist building owners, managers, and location managers in determining whether a building meets the general requirements to be classified as an "Approved Production Facility".

If the building does not meet ALL of the requirements, it is a "Production Location". Production Locations require Fire Safety Officers during production.

- ☐ Exit travel distance does not exceed two hundred feet (200').
- ☐ Exit doors are equipped with panic hardware and swing in direction of travel.
- ☐ Illuminated exit signs are provided at all exits and where needed to guide occupants to exits.
- ☐ Emergency lighting provided for all exit pathways, including cross aisles and paths from sets to required exit pathways.
- ☐ A designated location for mobile or stationary generators with approved "pass troughs" in exterior or fire-resistive walls.

If you have not placed a checkmark at each item, you do not meet the minimum requirements for consideration as an Approved Production Facility.

You may contact the Fire Prevention Division at (910) 343-0696 for assistance.

**Wilmington Fire Department
Fire Prevention Division**

Information Sheet

Subject: Approved Production Facilities

This information sheet is intended to assist building owners, managers, and location managers in determining whether a building may be classified as an "Approved Production Facility" or is a "Production Location".

Definitions:

"Approved Production Facility" is an existing building, or portion of a building, or a group of buildings altered for use by the entertainment industry for the purpose of motion picture, television, or commercial production.

"Production Location" is any area or facility outside a production studio, approved production facility, or sound stage used by the entertainment industry for the purpose of motion picture, television, or commercial production.

Occupancy Classification:

An Approved Production Facility is classified as a Group F, Division 1 Occupancy. Any building proposed for use as an Approved Production Facility must meet all requirements of the North Carolina Building Code for such use.

If the use of an Approved Production Facility is changed, i.e., for live audience shows or wrap parties, a permit is required from the Wilmington Fire Department. A Fire Safety (FSO) may also be required.

General Requirements - Approved Production Facilities:

Perimeter aisles shall be provided. Aisles shall have a minimum clear width of four feet (4'), and a minimum clear height of seven feet (7'). The aisles shall be identified by four inch (4") wide yellow stripes at the edges, or other approved method.

The maximum travel distance to any exit shall be two hundred feet (200').

Exit doors shall be equipped with panic hardware, and shall swing in the direction of travel.

Illuminated exit signs shall be installed at all exits, and where needed to guide occupants to an exit.

Exit path illumination shall be provided by an approved emergency back-up system in the event of a power failure.

Means of egress shall be maintained at all times.

All foam plastics shall have a maximum heat-release rate of one hundred (100) kilowatts when tested in accordance with nationally recognized standards.

Fire Detection Equipment:

Fire alarm panels shall be listed, and shall be utilized in accordance with their listing.

Panels may be temporarily supported by sets, platforms, or pedestals.

Design Requirements:

The Fire Department shall be provided with certification that the approved production facility will sustain the anticipated loads of sets, props, lighting, or other temporary modifications.

Where the anticipated loads exceed the design criteria, the building or portions thereof shall be modified for the additional loads.

Electrical Requirements:

Mobile generators may be used for auxiliary power.

All distribution equipment shall be designed for sound stage use. The wiring to such equipment shall be permanent, and shall comply with the National Electrical Code.

Temporary feeders shall not be tapped from panelboards and switchboards where deadfront covers have to be removed.

- Electrical panel "tap-ins" are allowed at Production Locations that have been inspected by the electrical inspection department.

Permanent or temporary equipment shall be installed in accordance with the National Electrical Code. Such equipment shall not obstruct exits, means of egress, or fire department access. No power cables in the width of an exit door.

Portable, mobile, or stationary power-generating equipment may be used to supplement building electrical power for temporary wiring. Equipment shall be located at a pre-designated location approved by the Fire Department.

Temporary auxiliary power cables supplied from mobile generators or adjacent buildings may pass through exterior walls and interior fire-resistive walls, provided an approved through-penetration fire-stop system is utilized for the protection of the opening. Cables cannot pass through an exit door.

Mechanical Equipment:

All auxiliary heating, ventilation, and air conditioning equipment shall be approved and listed for the intended use. Flexible duct, if utilized, shall be noncombustible. Such auxiliary equipment shall not obstruct exits, means of egress, or fire department access.

Fire Permits:

Fire Permits are required from the Wilmington Fire Department, Fire Prevention Division at 801 Market Street, telephone (910) 343-0696 for the following activities, operations, practices, or functions:

1. Candles and open flames, such as prop fireplaces and cooking appliances. **
2. Dust producing operations, such as interior woodworking. *
3. Flammable or combustible liquids (Class I liquids in excess of five [5] gallons and Class II and Class III liquids in excess of twenty-five [25] gallons) if inside a building. *
4. Live audience in attendance during production. **
5. Parking of vehicles inside a structure. ***
6. Pyrotechnical and flame special effects. ***
7. Spraying with flammable or combustible liquids. *
8. Tents or canopies in excess of 700 square feet (see exceptions on page 22). ***
9. Welding or hot cutting operations. *
10. Wrap parties. ***

* Annual Fire Permit.

** Annual Fire Permit for a specific type at a fixed location or a Fire Permit for each use or occurrence of different type or location.

*** Fire Permit for each use or occurrence.

Fire Safety Officers:

Required for all productions where pyrotechnic special effects are used.

Usually required for productions where flame special effects are used.

May be required at Production Locations.

May be required if live audience in attendance during production and wrap parties.

Not required for candles, prop fireplaces, or cooking appliances when a Fire Permit has been obtained from the Fire Prevention Bureau.

Not required when all the provisions of this information sheet are met.

**Fire Prevention Division
801 Market Street
Wilmington, N.C. 28401
(910) 343-0696**

Information Sheet: Tents, Canopies, and Membrane Structures

This Information Sheet provides general guidance related to the minimum standards for ALL tents, canopies, and membrane structures erected or installed within the jurisdiction of the Wilmington Fire Department. The information is based upon the *North Carolina Fire Prevention Code*. For complete information, refer to the referenced documents. When the term "shall" is used, it means a requirement or provision is **MANDATORY**, and represents the **MINIMUM STANDARD**.

I. Permit, Plans, and Information Required

- A. Application for a permit to erect or operate a tent, canopy, or membrane structure shall be made to the Fire Prevention Division a MINIMUM of three (3) days in advance of the "Set-Up" date.
- B. Tents and membrane structures having an area in excess of two hundred (200) square feet (19 m²) and canopies in excess of four hundred (400) square feet (37 m²) shall not be erected, operated, or maintained for any purpose without first obtaining a permit and approval from the code official. The following exceptions shall apply:
 - 1. Tents used exclusively for recreational camping purposes.
 - 2. Fabric canopies and awnings open on all sides, which comply with all of the following:
 - a. Individual canopies having a maximum size of seven hundred (700) square feet (65m²).
 - b. The aggregate area of multiple canopies placed side by side without a fire break clearance of twelve feet (12') (3658 mm) not exceeding seven hundred (700) square feet (65 m²) total.
 - c. A minimum clearance of twelve feet (12') (3658 mm) to all structures and other tents.
- C. An affidavit or affirmation shall be submitted to the code official and a copy retained on the premises on which the tent or air-supported structure is located. The affidavit shall attest to the following information relative to the flame resistance of the fabric:
 - 1. Names and addresses of the owners of the tent or air-supported structure.
 - 2. Date the fabric was last treated with flame-resistant solution.
 - 3. Trade name or kind of chemical used in treatment.
 - 4. Name of person or firm treating the material.
 - 5. Name of testing agency and test standard by which the fabric was tested.
- D. A scaled drawing shall show the following (if there is an occupant load of fifty (50) or more):
 - 1. The location of the tent in relation to other structures or tents.
 - 2. The location of support ropes and guy wires.
 - 3. The location and width of all exits, exit signs, emergency lighting, and seating and aisle arrangement.
 - 4. The location, twenty foot (20') width and thirteen foot, six inch (13',6") vertical clearance of fire lanes, vehicle parking, and internal combustion engines.

II. Location of Tents and Parking Requirements - Table II (See Notes)

| | Minimum Separation From Any Property Line, Building, or Other Tent, Canopy, or Membrane Structure (Note 1) |
|--|---|
| | 20 feet (Note 2, 3) |
| | 30 feet (Note 2, 3) |
| | 50 feet |

Note 2: Tents, canopies, and temporary membrane structures may be separated from each other by a minimum of ten feet (10') or the required exit width, whichever is greater, when the total

area of adjacent tents, canopies, or membrane structures is less than fifteen thousand (15,000) square feet.

Note 3: Required separation may be reduced when the following conditions are met:

- a. The aggregate floor area of the temporary membrane structure, tent, or canopy shall not exceed ten thousand (10,000) square feet (929 m²).
- b. The aggregate floor area of the building and temporary membrane structure, tent, or canopy shall not exceed the allowable floor area including increases as indicated in the *International Building Code*.
- c. Required means of egress provisions are provided for the building and the temporary membrane structure, tent, or canopy, including travel distance.
- d. Fire apparatus access roads are provided in accordance with Section 503 of the *Fire Prevention Code*.

III. Capacity of Tent and Exit Requirements - Table III (see Note)

| Capacity | Minimum Number of Exits | Minimum Width Exit Tents/Canopy | Minimum Width Exit Air-Supported |
|--------------|-------------------------|---------------------------------|----------------------------------|
| Up to 199 | 2 | 6' | 3' |
| 200 to 499 | 3 | 6' | 6' |
| 500 to 999 | 4 | 8' | 6' |
| 1000 to 1999 | 5 | 10' | 8' |
| 2000 to 2999 | 6 | 10' | 8' |
| Over 3000 | 7 | 10' | 8' |

Note: Total width in feet shall be no less than total occupant load divided by 50; divided equally among exits.

- A. Exit openings shall remain open or may be covered by a fire-retardant curtain, provided:
 1. Curtains shall be free sliding on a metal support rod. The support rod shall be a minimum of eighty inches (80") above the floor level at the exit opening. The curtains shall be arranged so that, when open, no part of the curtain shall obstruct the width of the exit.
 2. The curtains shall be of a color (or colors) that contrast with the color of the tent.
- B. Exits shall be spaced at approximately equal intervals around the perimeter of the tents and shall be so located that no point is more than one hundred feet (100') from an exit.
- C. Number and width of exits shall be in accordance with Table III.

IV. General Requirements (Include as notes on your drawing)

- A. NO SMOKING is permitted in any tent or canopy
- B. Heating or cooking equipment, tanks, piping, hoses, fittings, valves, tubing, and other related components shall be installed as specified in the *International Mechanical Code* and the *International Fuel Gas Code*, and shall be approved by the code official.
- C. Gas, solid, and liquid fuel burning cooking or heating equipment shall be vented to the outside air by means of an appropriate and approved flue or vent, and in such a manner that all portions of the tent or canopy are twelve inches (12") or more from the flue or vent. Heating and cooking equipment shall not be located within ten feet (10') of exits, aisles, passageways, or combustible materials. Non-vented heaters are not permitted in places of public assembly.

NOTE: Cooking equipment shall be located not less than twenty feet (20') from any tent or canopy.
- D. Candles and any open flame require a separate permit. All such devices shall be in compliance with Section 308 of the *Fire Prevention Code*.
- E. Fire extinguishers shall be provided in every tent, canopy, or membrane structure as follows:
 1. Minimum fire extinguisher coverage shall be provided in every tent, canopy, or membrane structure in accordance with Section 906 of the *Fire Prevention Code*
 2. At least one 40-B:C rated fire extinguisher shall be provided for each kitchen, mess hall, power generator or transformer, locations where flammable or combustible liquids are used, dispensed, or stored.

V. Exit signs and Exit Illumination (Include as notes on your drawing)

- A. When required, exit signs shall be installed at required exit doorways and where otherwise necessary to clearly indicate the direction of egress when the exit serves an occupant load of fifty (50) or more.
- B. Illumination of exit signs in tents, canopies, and temporary membrane structures shall be of an approved self-luminous type, or shall be internally or externally illuminated by fixtures supplied in the following manner:
 - 1. Two separate circuits, one of which shall be separate from all other circuits, for occupant loads of three hundred (300) or less, or
 - 2. Two separate sources of power, one of which shall be an approved emergency system, shall be provided when the occupant load exceeds three hundred (300). Emergency systems shall be provided from storage batteries or on site generator set, and the system shall be installed in accordance with the North Carolina Electrical Code.

VI. Arrangement of Tables, Seating, and Exit Widths

- A. Tables without seating - sales, exhibits, trade shows, etc., will require exit width that shall be in accordance with the Building Code and the Life Safety Code.
 - 1. Aisle width serving one side shall be a minimum of thirty-six inches (36").
 - 2. Aisle width serving two sides shall be a minimum of forty-four inches (44").
 - 3. Aisle access way width serving one side shall be a minimum of twenty-four inches (24").
 - 4. Aisle access way width serving two sides shall be a minimum of forty-four inches (44").
- B. Tables with seating - banquets, receptions, performances, etc., shall be arranged in accordance with the following minimum standards:
 - 1. Aisle Access Way - Initial portion of an exit access that leads to an aisle.
 - a. The width between tables shall be a minimum of fifty inches (50") measured table edge to table edge with seating on both sides, when the travel distance to an aisle is twelve feet (12') or less.
 - b. The width between tables shall be a minimum of fifty inches (50") measured table edge to table edge with seating on both sides, when the travel distance to an aisle is greater than twelve feet (12'), an increase of 0.5 inch for each additional foot of travel distance beyond 12 feet, but NEVER more than thirty feet (30').
 - 2. The path of travel along the aisle access way shall not exceed thirty-six feet (36') from any seat to the closest aisle or exit door.
 - 3. Aisle - Unobstructed portion of an exit access that leads to cross aisle or exit door.
The width between tables shall be a minimum of seventy-four inches (74") measured table edge to table edge with seating on both sides, and shall be a minimum of fifty-five inches (55") with seating on only one side.

VII. Fire Safety Officers (You may want to include as notes on your drawing)

- A. The Fire Chief may require a Fire Safety Officer when necessary to safeguard the premises when it is determined that a hazard may exist.
- B. Contact the Fire Prevention Division at (910) 343-0696 to arrange for a Fire Safety Officer.

VIII. Labeling of Tents

- A. All tents shall be labeled.
- B. Each section of top and sidewalls in a tent with an occupant load of ten (10) or more shall have a durable label, permanently affixed, bearing the following information:
 - 1. The Seal of Registration.
 - 2. If treated, the name and registration number of the approved application concern and approved chemical used, and the date of treatment.
 - 3. If registered fabric, the trade name and registration number of the approved fabric, and the date of production.
 - 4. In lieu of labels, the required information may be applied directly to the fabric by print, stamp, or stencil. If you have any questions regarding this information sheet, please contact the Fire Prevention Division at (910) 343-0696.

Tables with Seating Aisle Width Minimum Requirements

Aisle Access Way:

The width between tables shall be a MINIMUM of fifty inches (50") measured table edge to table edge with seating on both sides, when the travel distance to an aisle is twelve feet (12') or less.

The width between tables shall be a MINIMUM of sixty-two inches (62") measured table edge to table edge with seating on both sides, when the travel distance to an aisle is greater than twelve feet (12'), an increase of 0.5 inch for each additional foot of travel distance beyond 12 feet, but NEVER more than thirty feet (30').

Aisle:

The width between tables shall be a MINIMUM of seventy-four inches (74") measured table edge to table edge with seating on both sides, and shall be a MINIMUM of fifty-five inches (55") with seating on only one side.

Exit Travel Distance:

The distance to an exit shall never exceed one hundred feet (100') in a tent, one hundred fifty feet (150') in non-sprinklered structures, and two hundred feet (200') in sprinklered structures.

Wilmington Fire Department
Fire Prevention Policy Number 1
Subject: Tent Installations - Single Family Dwelling Sites

I. Scope

This policy is applicable to the placement of tents and canopies at properties on which a single-family dwelling is located - "Backyard Set-Ups".

II. Application

A. A tent or canopy may be located closer to a building than the minimum distance specified in the North Carolina Fire Prevention Code, upon written request, when the following conditions have been met:

1. The following general requirements apply to any tent or canopy installed within the scope of this policy:
 - a. The tent may be located immediately adjacent to the residence.
 - b. A Wilmington Fire Department permit is required for all tents more than two hundred (200) square feet, and canopies more than four hundred (400) square feet in area.
2. Tents and membrane structures having an area in excess of two hundred (200) square feet (19m²), and canopies in excess of four hundred (400) square feet (37m²) shall not be erected, operated, or maintained for any purpose without first obtaining a permit and approval from the code official, with the following exceptions:
 - a. Tents used exclusively for recreational camping purposes.
 - b. Fabric canopies and awnings open on all sides, which comply with all of the following:
 - i. Individual canopies having a maximum size of seven hundred (700) square feet (65 m²).
 - ii. The aggregate area of multiple canopies placed side by side without a fire break clearance of twelve feet (12') (3658 mm) not exceeding seven hundred (700) square feet (65 m²) total.
 - iii. A minimum clearance of twelve feet (12') (3658 mm) to all structures and other tents.
3. The number of exits required must be in accordance with the following table:

| | Minimum Number of Exits | Minimum Width Exit Tents/Canopy | Minimum Width Exit Air-Supported |
|--|-------------------------|---------------------------------|----------------------------------|
| | 2 | 6' | 3' |
| | 3 | 6' | 6' |
| | 4 | 8' | 6' |
| | 5 | 10' | 8' |
| | 6 | 10' | 8' |
| | 7 | 10' | 8' |

4. The required width of exits, aisles, and passageways shall be maintained at all times to a public way. Guy wires, guy ropes, and other support

members shall not cross a means of egress at a height of less than eight feet (8') (2438 mm). The surface of means of egress shall be maintained in an approved manner.

5. The location of the tent or canopy shall not adversely affect exiting from any adjacent building.

B. The approval of an alternate tent or canopy location does not establish a precedent. Each event requires separate approval.

**Wilmington Fire Department
Fire Prevention Policy Number 2
Subject: Alternative Tent Locations**

I. Scope

This policy is applicable to the placement of tents and canopies at distances less than the minimum established by Uniform Fire Code, Section 3205.

II. Application

- A. A tent or canopy may be located closer to a building, upon written request, when ALL of the following conditions have been met:
 - 1. Separation distance between temporary membrane structures, tents, and canopies, not used for cooking, is not required when the aggregate floor area does not exceed fifteen thousand (15,000) square feet (1394m²).
 - 2. Temporary membrane structures, tents, or canopies need not be separated from buildings when all of the following conditions are met:
 - a. The aggregate floor area of the temporary membrane structure, tent, or canopy shall not exceed ten thousand (10,000) square feet (929 m²).
 - b. The aggregate floor area of the building and temporary membrane structure, tent, or canopy shall not exceed the allowable floor area including increases as indicated in the *International Building Code*.
 - c. Required means of egress provisions are provided for the building and the temporary membrane structure, tent, or canopy, including travel distance.
 - d. Fire apparatus access roads are provided in accordance with Section 503 of the *Fire Prevention Code*.
- B. The approval of an alternate tent or canopy location does not establish a precedent. Each event requires separate approval, even at the same site.
- C. All requests for alternate locations shall include the following:
 - 1. A letter requesting consideration of the alternate location.
 - 2. A site plan, drawn to scale, showing the tent location, the adjacent building(s), path of egress (exiting) from the tent to a public way, the location and nature of any openings in the adjacent building, and whether the adjacent building is provided with an approved fire sprinkler system.
 - 3. If the adjacent building does not meet the conditions listed above in Section A, please do not ask the Fire Department to approve an alternate tent location.

Subject: Tent Installations - Structural Certification Requirements

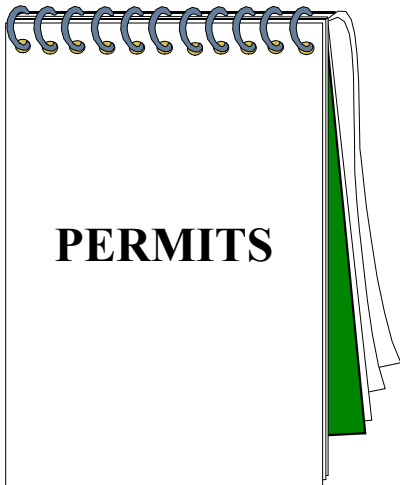
I. Scope

This policy establishes criteria to determine when certification, by a structural, civil, or other qualified registered engineer, is required for compliance with North Carolina Fire Prevention Code Section 2404 . This policy is applicable to specific tent locations.

II. Application

- A. The North Carolina Fire Prevention Code, Section 2404, requires that tents, air-supported, air-inflated, or tensioned membrane structures and their appurtenances shall be adequately roped, braced, and anchored to withstand the elements of weather, and prevent against collapsing. Documentation of structural stability shall be furnished to the code official on request. The Wilmington Fire Department may require certification of the provisions of this section by a structural, civil, or other qualified registered engineer.
- B. When a tent is to be erected in the following locations, the Wilmington Fire Department Fire Prevention Division reserves the right to require certification.
 - 1. Tents to be erected on the beach or other area having sand or sandy type soil conditions.
 - 2. Tents to be erected at any parking lot, or other wind exposed location.
 - 3. It is NOT the intent to automatically require certification. This policy recognizes the technical competency of tent installation contractors. We do reserve the right to require certification.
 - 4. A tent installed at a location where a tent certification has been previously required may utilize the same approved method of securing the tent. Such proof shall be submitted at the time of application for a tent permit.
- C. The Wilmington Fire Prevention Bureau will review all proposed tent installation when the floor area is five thousand (5,000) square feet or more. The installation contractor must submit plans and structural calculations to the Fire Prevention Bureau for review and approval prior to erecting any such tent.

SECTION III



&



**SPECIAL
EFFECTS**

I. CANDLE AND OPEN FLAME

A. Candle Approval Criteria for Permit

1. Single ply tissue on top of chimney over ignited candle for ten (10) seconds without burning.
2. Returns to upright position after tipping to forty-five (45) degree angle.
3. Modification options for approval
 - a. Shorten length of candle
 - b. Increase length or diameter of chimney
 - c. Secure base of candle to prevent tipping
4. Candelabra
 - a. The base is secured to prevent tipping
 - b. Located where no contact with ignited candles is possible, i.e., center of large table, to the sides of an alter out of the path of travel, etc.
5. Hand held candles and open flame devices used in conjunction with theatrical performances; allowed when adequate safety precautions have been taken:
 - a. Fire extinguisher(s) in nearby proximity
 - b. Flame and hot wax prevented from contacting skin or other combustible material, i.e., clothes, hair, etc.

B. Sterno and small candles used below chafing dishes are functions that **do not** require a permit. General fire safety precautions are enforceable, such as:

1. Keeping food or a pan with water above the flame
2. Placing the Sterno or candle container on top of a noncombustible plate or tray.
3. Keeping combustible materials away from the Sterno or candle container.

C. Open Flame Approval Criteria for Permit

1. Open flame being used in conjunction with an appliance as intended, i.e., fireplace, stove, barbeque, tiki torch, etc.
 - a. Open Flame Permit is required.
 - b. FSO requirement is determined on a case-by-case basis.
 - c. Permit may be issued for up to a year at Approved Production Facilities.
2. Open flame devices used to simulate uncontrolled fire is considered a Flame Special Effect.
 - a. Pyrotechnic/Special Effects Permit is required.
 - b. An FSO will usually be assigned.

II. WOODWORKING AND OTHER DUST PRODUCING OPERATIONS

Equipment or machinery within a building that generates or emits combustible fibers shall be provided with an approved dust-collecting system.

- A. One or two machines and amount of material being processed is minimal, a permit is not required.
- B. Sweeping up or vacuuming combustible fibers on a regular basis with appropriate disposal in noncombustible container.
- C. Several machines and/or amount of material being processed is significant, a permit is required.
 - 1. Shop vac type devices connected to machines that are in operation whenever the machines are in use.
 - 2. Ducting connected to machines and a central vacuum system that is in operation whenever the machines are in use.

III. WELDING AND CUTTING

- A. Compressed gas cylinders shall be secured to prevent falling, i.e., attached to a fixed object, cart, rack, or nesting.
- B. Compressed gas cylinders designed for protective caps shall have the cap in place except when in use.
- C. Fire extinguishing appliance shall be kept at a nearby location (garden hose may be the fire extinguishing appliance).
- D. Welding or cutting performed above or within ten feet (10') of combustible construction or materials **shall be provided with a fire watch during and for at least thirty (30) minutes after completion** to operate fire extinguishing equipment.

IV. CHRISTMAS TREES AND OTHER VEGETATION

- A. Flame treatment is **not** required to be affixed to live trees and other vegetation inside assembly occupancies, approved production facilities, and production locations.
- B. Flame treatment is required to be affixed to cut trees and other vegetation inside assembly occupancies, approved production facilities, and production locations.
- C. Flame treatment test:
 - 1. Ignited lighter or match is held to treated material for ten (10) seconds. Flame is removed from material, and, if no

- sustained ignition occurs or fire self extinguishes within ten (10) seconds, material is allowed.
2. If sustained ignition occurs, flame retardant re-treatment is required. The material is tested again after an appropriate drying time per flame retardant instructions.

V. FIREWORKS, PYROTECHNIC, AND FLAME SPECIAL EFFECTS

- A. The storage, use, and handling of safe and sane or illegal fireworks is prohibited.
- B. Public fireworks displays are authorized with special permit; an FSO is also required.
- C. Pyrotechnic Special Effects:
 1. Articles containing any "pyrotechnic composition" manufactured and assembled, designed or discharged, in connection with television, theater or motion picture productions, which may or may not be presented before live audiences, and any other articles containing any pyrotechnic composition used for commercial, industrial, educational, recreational, or entertainment purposes when authority having jurisdiction.
 - a. Pyrotechnic composition means any combination of chemical elements or chemical compounds capable of burning independently of oxygen of the atmosphere.
 - b. Pyrotechnic device means any combination of materials, including pyrotechnic compositions, which, by the agency of fire, produce an audible, visual, mechanical, or thermal effect designed and intended to be useful for industrial, agricultural, personal safety, or educational purposes.
 - c. Pyrotechnic devices usually require activation through an electronic or fuse type mechanism.
 2. Pyrotechnic/Special Effects Permit is required.
 3. An FSO will be required.
 4. A Proper License is required to handle, supervise, or discharge pyrotechnic devices.
 5. See Attachment #1, pp. 28-36, for further information and detail on Pyrotechnic Special Effects.
- D. Flame Special Effects

1. Open flame devices used to simulate an uncontrolled fire, or a significant number of candles, which constitutes a potential hazard.
 - a. Bonfire, vehicle fire, structure fire, contents fire, body burn, fireball, any device that shoots fire, etc.
 - b. Flame can be produced by solid, liquid, or gas materials.
2. Pyrotechnic/Special Effects Permit is required.
3. An FSO will usually be assigned.
4. A License is **not** required to handle or use flame special effects.

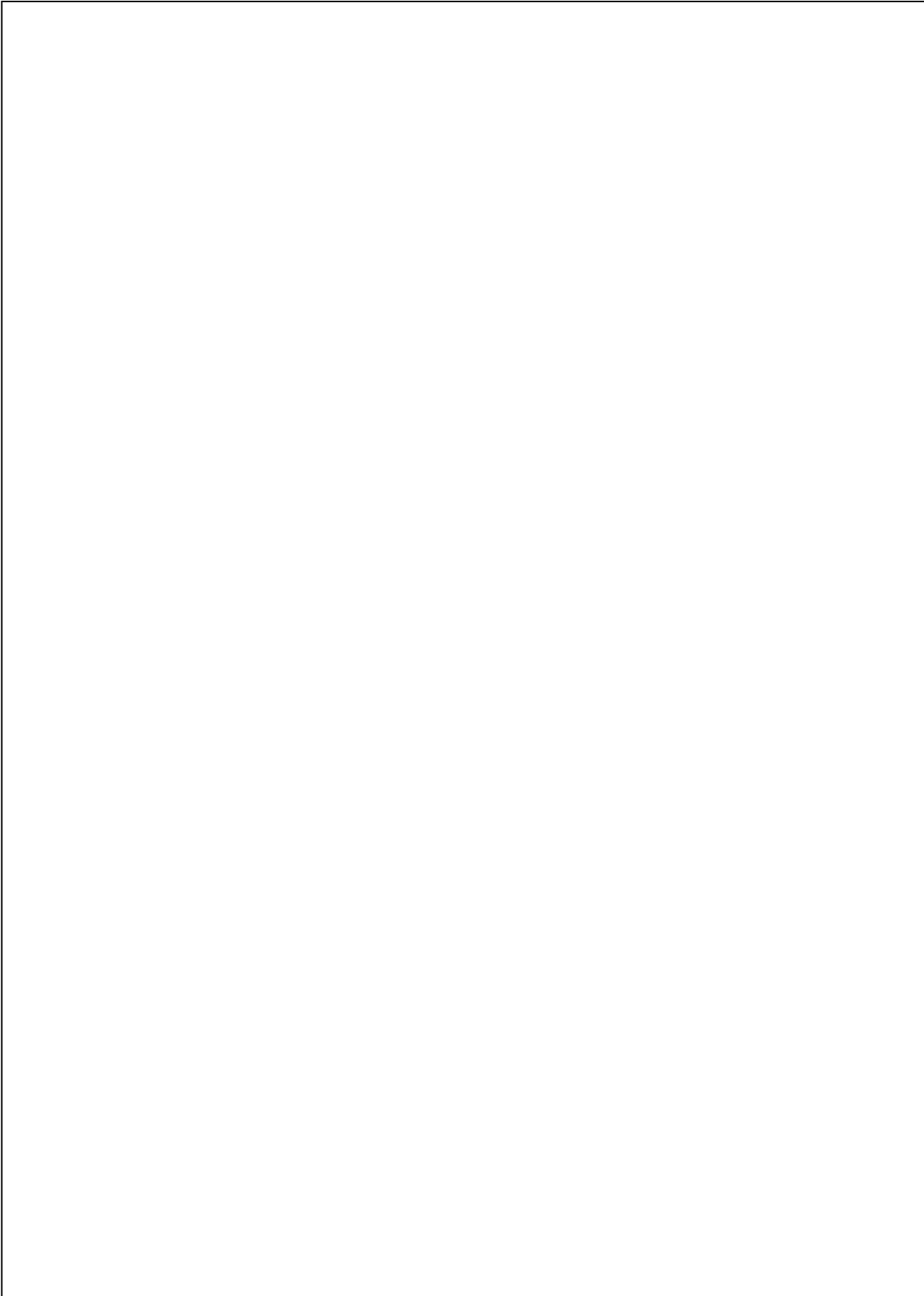
VI. STUNTS

- A. Stunt activities can be regulated by the AHJ through the permit process, but not the person(s) performing the stunt.
 1. A stunt involving fifty (50) or more persons can require a permit to operate a place of assembly, which includes the number of production crewmembers, actors, and bystanders inside of a building.
 2. FSO requirement is determined on a case-by-case basis.
- B. Permits
 1. Required for the pyrotechnic and/or flame special effects.
 2. No permit required for falls, fights, or other action type stunts that involve less than fifty (50) persons.
- C. See Attachment #2, pp. 37-39, for further information and detail on Stunt Safety.

VII. STORAGE MAGAZINES FOR EXPLOSIVE MATERIALS

- A. Storage Magazine Classification
 1. Type 1, 2, 3, 4, or 5 Magazine
 2. Type 3 Magazine (a.k.a. day box)
 - a. Most common type magazine used during events and film productions.
 - b. Used for back and forth transport of pyrotechnic devices needed for a single scene, shot, or performance.
 3. Type 2 and 4 are the most common larger magazines, and require a permit.
- B. Most common types of explosive material used during events and film productions that can be stored in Type 1-4 Magazines.

1. Low Explosives - Class B (Explosives, Division 1.2 or 1.3) Black Powder and Special Fireworks
 2. Class C (Explosives, Division 1.4) Common fireworks, safety fuse, electric squibs, igniters, and igniter cord.
- C. Storage Amounts
1. Class C Explosives shall not exceed fifty (50) pounds inside a structure.
 2. Black Powder shall not exceed two hundred (200) pounds inside a structure.



Attachment #1

PYROTECHNIC SPECIAL EFFECTS INFO SHEETS

Definitions:

Binary Low Explosive Compounds - Special effects materials in which fuel and an oxidizer are mixed together to produce a pyrotechnic composition.

Blank Cartridge - A cartridge constructed from either metal or plastic casing, with a center rim fire primer filled with various amounts of pyrotechnic compositions measured by loads.

Blasting Galvanometer - An electrical resistance measuring device designed specifically and approved for testing of electrical firing circuits.

Bullet Effect - The discharge of the pyrotechnic or explosive bullet hit.

Bullet Hit - A device containing various levels and amounts of pyrotechnic composition, whose purpose is to create the illusion of a bullet impact.

Detonator - Any device containing a detonating charge that is used for initiating detonation in an explosive. The term includes, but is not limited to, electric blasting caps of instantaneous and delay types, detonating cord delay connectors, and nonelectric instantaneous and delay blasting caps.

Electric Firing - A technique used to discharge fireworks in which an electric match or squib and a source of electric current are used to ignite fuses or lift charges.

Electric Match - An electric device containing a pyrotechnic compound that ignites when sufficient current flows through the leads.

Flash Powder - Pyrotechnic composition intended for use in firecrackers and salutes, and often used for "flash-type" effects on stage and in productions involving special effects. Flash powder produces an audible report and a flash of light when ignited. Typical flash powder compositions contain potassium chlorate or potassium perchlorate, sulfur or antimony sulfide, and powdered aluminum.

Ignitor - An electric, chemical, or mechanical device used to initiate burning of pyrotechnic or propellant materials.

Match - A fuse made of string or thread impregnated with black powder.

Misfire - A pyrotechnic item that fails to function as designed after initiation.

Mortar - A cylinder that is used to hold and fire public display or special effects pyrotechnic items or compositions.

Pan Type Mortar - A shallow metal container that is used to hold and fire special effect pyrotechnic compositions.

Shunt - A deliberate short circuit of an electrically fired pyrotechnic device or a means contained within its firing system to protect it from accidental ignition by extraneous electricity.

Soft Detonator - A detonator in which the explosive or pyrotechnic composition material is encased in a nonmetallic container.

Squib - See Electric Match, Detonator, or Soft Detonator.

License Scope:

Pyrotechnic Operator - A license authorizes and places the responsibility for handling, supervision, and discharge of any fireworks item or pyrotechnic device and establishes that the operator is responsible for the training of his or her assistants in the safe handling, supervision, and discharge of these items and devices, in accordance with the following:

Explosive Materials Not Included in Scope of License - The license scope as defined in this section is restricted to the use of materials defined as "fireworks" (as defined in Health and Safety Code) and in no way confers authority for the use and discharge of explosive materials.

General Safety Requirements:

Personnel - The employer or permittee shall be responsible for instructing his or her personnel who handle fireworks, pyrotechnic compositions, or devices in any capacity, in the hazards of and safety procedures relating to fireworks, pyrotechnic compositions, or devices as contained herein.

Smoking, Storage, and Handling Facilities - Smoking shall be prohibited and "No Smoking" signs posted in all portions of the premises or locations where fireworks, pyrotechnic compositions, or devices are stored and handled.

Prohibited Substances - Intoxicating liquids, narcotics, and controlled substances are prohibited within the area of the firing site as determined by the authority having jurisdiction, and shall not be used by any person handling fireworks or special effects at any time during the transportation, set up, firing, or removal.

Electrical Firing Circuits:

Electrical Firing Circuits, General - Connecting any firing circuit to any power supply is prohibited until all special effects devices, fireworks, and pyrotechnics in the sequence are connected to firing leads and the firing area is clear of all unauthorized personnel.

EXCEPTION: Circuit testing as described below.

Power Sources - Power sources for firing special effects devices, fireworks, and pyrotechnics, shall be restricted to batteries or individually isolated, ungrounded generators used for firing purposes only. Commercial or house power may be used provided the firing system is electrically isolated from the commercial or house power through the use of such items as isolation transformers. Under no condition may commercial or house power be used directly for firing purposes.

Firing System Safeguards - All firing systems, including battery and power circuit types, shall be designed to insure against accidental firing by providing a shunt or other control method in which no firing power may be applied to any firing circuits unless the operator intentionally enables or arms the firing system before applying firing power.

Circuit Tests - All electrically fired pyrotechnic circuits shall be tested with a galvanometer or other test device in which the test current is not capable of firing the pyrotechnic device being tested.

Sight Firing - Special effects devices and pyrotechnics shall not be fired unless the area involved with the firing is in the continuously unobstructed full view of the pyrotechnic operator or his/her assistant at the time of firing.

Special Effects:

Scope - This section shall govern all "Special Effects Devices/Materials", including those materials that have been classified and described by the regulations of the Department of Transportation as Special Fireworks Class B. Explosives and Common Fireworks Class C Explosives and such additional items as listed herein.

Responsibility - The company representative shall provide to the authority having jurisdiction, the name and license number of the special effects operator who shall have the authority, responsibility, and be in charge of handling all Special Effects Materials. The company representative shall also allocate sufficient time to the Special Effects Pyrotechnic Operator to prepare for the transportation, packing, storing, securing daily, discharging, disposing of, or otherwise handling of fireworks, pyrotechnic devices, or materials in a safe manner. Upon completion of firing, no unauthorized person shall be permitted access to the firing area until the licensed pyrotechnic operator has determined the area to be safe and secure.

Orientation Meeting - Prior to the activity, a discussion of the events planned and all aspects and ramifications concerning safety issues as they relate to the safe use of

fireworks, pyrotechnic devices and materials shall be held among all appropriate parties, as determined by the authority having jurisdiction.

Special Effects Materials - Materials described herein as Special Effect Materials can be used as Special Effects. Other hazardous materials may be used when so approved by the authority having jurisdiction.

Storage and Working Supplies - Special Effects Materials storage facilities shall be used exclusively for the storage of Special Effects Materials. Storage facilities shall not be used for the assembling, compounding, or manufacture of Special Effects Materials or any other item of fireworks. Magazines shall be kept locked at all times except when supplies are being withdrawn or replenished. Special Effects Materials shall be stored in accordance with the Code of Federal Regulations.

Quantities - The quantities of Special Effects Materials removed from magazines shall be limited to the amount necessary for immediate use. Under no condition shall any surplus or excess be permitted to remain outside a magazine, unless under the direct supervision of a licensed pyrotechnic operator.

Equipment - All tools, scoops, and devices used in loading and handling Special Effects Materials shall be made of non-sparking materials.

Mixing - No person shall mix any Special Effects Material, except a licensed manufacturer or a licensed Special Effects Pyrotechnic Operator First Class. All mixing, assembling, or compounding, when done by other than a licensed manufacturer, shall be conducted in accordance with the applicable provisions herein, and with the approval of the authority having jurisdiction.

EXCEPTION: Binary A & B Flash compositions prepackaged by a licensed manufacturer may be mixed and utilized according to manufacturer's instructions by a Pyrotechnic Operator Special Effects Second Class, or Pyrotechnic Operator, Theatrical.

Special Effects Water Locations - All special effects devices and explosive charges set in or on the surface of water, either salt or fresh, or any other liquid, shall be fired by a separate, individual, ungrounded, and uncommon two-wire circuit.

Special Effects Not Allowed to be Carried in Wearing Apparel - No Special Effects Materials, other than blank cartridges, may be carried within the wearing apparel of any person. This shall not apply to actors in portraying a scene in a theatrical, television, or film production.

Special Effect Packaging - All Special Effects Materials shall be packaged in accordance with the Department of Transportation standards, and shall remain in the prescribed container until used or placed in a magazine.

Special Effects Mortars - Mortars and other items used to hold special effects, pyrotechnic or explosive materials during discharge shall be made of a material having a thickness proportional to the strength of the explosive or pyrotechnic material being used, and, in every case, sufficient to prevent distortion in service. Tubular mortars for firing aerial pyrotechnic and fireworks shells shall conform to the requirements herein.

Flash Powder Mortars - The use of special effects flash powder mortars consisting of converted switch boxes, sockets, or similar components is prohibited.

Special Effects Reports - Verbal reports shall be made to the State Fire Marshal within twenty-four (24) hours after a firing under this article when either of the following events occurs:

1. Injury or death to the public or the crew as a result of firing.
2. Fires requiring emergency action or response.

Within ten (10) working days following an incident giving rise to a verbal report, the licensed pyrotechnician in charge of the activity shall submit a complete, accurate, and factual report directly to the State Fire Marshal on the episode.

Special Effects Materials:

The following materials, when used in the motion picture, television, theatrical industry by licensed special effects pyrotechnicians, and when permitted by the authority having jurisdiction, are to be regulated under this section as fireworks, pyrotechnic materials and devices, and not as explosives under Health and Safety Code.

Bulk Powder Compositions and Devices

- Black Powder
- Smokeless Powder
- Smoke Flash Compositions
- Common Photo Flash Compositions
- Illuminating Compositions
- Atomized Flash Compositions
- Two Component Flash Powder
- Flash Paper
- Flash Cotton
- Flash Powder
- Simulated Phosphorus
- Sparking Granules
- Lifters

Smoke Powder Composition and Devices (all colors)

- Smoke Compositions
- Smoke Pellets
- Smoke Granules
- Smoke Candles
- Smoke Cookies
- Smoke Grenade
- Smoke Pot
- Smoke Signals

Matches and Fuses

- Quick Match
- Black Match

Arcing Match
Silver Match
Cannon Fuse
Safety Fuse
Thermalite
Instantaneous Fuse
Ignitor Cord

Squibs and Detonators

Bullet Hits
Electric Match
Soft Detonators
Squibs
Detonators
Ignitors

Fireworks

Close Proximity Class 1.4G Fireworks
Special Class 1.3G Fireworks

Other Materials

Primacord or Detonating Cord
Exploding Bolts and Cable Cutters
Non-Electric Fuse
Shape Charges
Trick Noise Makers

Other Pyrotechnic Special Effects Materials, Definitions, and Terms

Arcing Match - A black match that has been made with nodules of sparking compound spaced along the length of the string.

Binary Flash Compositions - Two compounds that are packaged and shipped separately; when mixed together, become a dangerous complete flash compound.

Black Match - A cotton string that has been impregnated with black powder slurry and allowed to dry. Black match is frequently used in conjunction with a squib to light other substances or circuits.

Black Powder - A pyrotechnic mixture of potassium, nitrate, sulphur, and charcoal.

Black Powder Bomb - A pyrotechnic lifting charge that comes in a variety of sizes from two (2) ounces to sixteen (16) ounces. Black powder bombs are handmade in soft or hard wrapped forms, and may be dipped in lacquer for sealing and hardening. Each bomb contains black powder and an ignition squib for detonation. Black powder bombs are frequently made on the set.

Det-Cord (Primacord) - Flexible detonating cord, used frequently as a cutting device. It is a highly explosive powder encased in a plastic covered cord resembling a clothesline cord.

Flash Charge - A flash compound used to simulate a pyrotechnic flash or shower of sparks.

Flash Compositions - A compound that, when lit, burns extremely rapid, creating a very bright flash.

Flash Paper - Nitro-cellulose in paper form, used principally by magicians.

Smoke Compositions - These pyrotechnic materials are made into various forms, most often granular or powder. They also come in various colors. They can be fired manually either with an open flame, heated surface, or electrically, with a squib.

Smokeless Powder - A pyrotechnic mixture of nitro-cellulose and nitroglycerin.

Flammable Solids:

Lycopodium - The spores produced by the genus of mosses called Lycopodium. This powdery, organic, yellow material can be agitated and dispersed into a cloud, then ignited by a spark or pilot flame. Although technically not a pyrotechnic composition, this product occasionally is used by pyrotechnicians to produce fire effects.

Naphthalene - Naphthalene (a pesticide) is a flammable solid resembling a white crystalline substance that comes in flakes or small crystals and discharges a strong mothball odor. When mixed with black powder ("naphthalene bomb"), it liquefies and emits a flammable vapor, causing the crystals to burn in a distinctive fingered pattern, which creates a unique special effect.

Liquid Smoke Effects:

Smoke (Liquid) - There are smoke effects that do not incorporate pyrotechnic compositions. These chemical liquids are vaporized either under exposure to the atmosphere (titanium tetrachloride) or by exposing one chemical component to a second chemical component (A & B smoke).

Inspection Guidelines:

There are many statutory and regulatory requirements for the use of pyrotechnic special effects; both the special effects coordinator and the fire safety officer must coordinate the use, handling, transportation, and storage of all special effects materials. The following items shall be accomplished prior to the use of all pyrotechnic special effects on location:

1. Special Effects permits shall be obtained and approved by the authority having jurisdiction.
2. Ensure the operator has a valid special effects license.
3. If you are uncertain about how a particular effect works, have the operator perform a test.
4. Ensure all personnel on the set are aware that special effects are going to be used.
5. When special effects are going to be used in conjunction with stunt performers, ensure that all parties have rehearsed and have made a "dry run" prior to filming.
6. Establish conditions on the set when setting up for a special effects scene (e.g., no smoking, no radios, no unauthorized personnel in the area, fire protection is on standby, know the escape routes from the location, etc.).
7. Be aware of the wind direction and speed, lay of the land (topography), exposures to people, buildings, sets, debris, power lines, shrubbery, vehicles, etc.
8. Ensure that there is constant communication on the set. Everyone involved should have a clear understanding of what is going on in the upcoming scene. SAFETY MEETINGS ARE A MUST!

9. Stay alert, stay informed, ask a lot of questions, and especially GET INVOLVED WITH THE SCENE. The information a safety officer provides may be of valuable assistance to the production company and may easily prevent an unfortunate mishap.

Attachment #2

STUNT SAFETY INFO SHEETS

Definitions:

Stunt - Webster's defines a stunt as a daring feat displaying unusual strength, skill, and risk; something of unusual nature.

Stunt Performer - A stunt performer is one who substitutes for an actor in scenes requiring physical prowess, or involving physical risk. A performer who does the dangerous falls, leaps, car chases, fast and trick horseback riding, fights, body burns, and other physically demanding acts.

Stunt Coordinator - A Stunt Coordinator oversees, prepares, choreographs, and usually performs the stunt himself/herself. Creating a stunt requires technical knowledge, skills, and experience, which can only be accomplished under the supervision of the Stunt Coordinator.

Fire Safety Officer Responsibilities:

It is the Fire Safety Officers responsibility to assure that any planned stunt is permitted through the appropriate governmental agency. The Fire Safety Officer shall discuss, plan, and organize the proposed activity with the Stunt Coordinator. Prior to and after filming, the Fire Safety Officer and Coordinator shall be responsible for all safety procedures.

Determining Safety:

Evaluating the difference between a safe stunt and an unsafe stunt can be somewhat difficult and intimidating. A competent safety officer will communicate, coordinate, and cooperate with the stunt coordinator and stunt person(s). A collaborative effort will ultimately provide for an effective and safe stunt while still maintaining a maximum visual impact.

Stunt Safety Checklist:

GET INVOLVED! Ask questions about the stunt. After the filming permit has been issued and approved, you should already know the who, what, when, where, why, and how factors of the particular stunt

- ✓ Question the experience and competence of the Stunt Coordinator.
- ✓ Check for unusual or abnormal procedures during the preparation of the stunt, i.e., faulty equipment, unsecured devices, construction problems, and possible dangerous after or side effects.

- ✓ Check for safety equipment that may be impaired or required, such as harnesses, seat belts, safety ropes or lines, roll bars and cages, protective shields, protective clothing, safety glasses, earplugs, headgear, boots, air bags, and parachutes.
- ✓ Check for standby emergency equipment, including fire extinguishers, first aid, paramedics fire apparatus, ambulance, water tenders, firefighting, and rescue equipment.
- ✓ Check for possible hazards, which may affect the cameraman, cast, crew, the public, or other onlookers and exposures.
- ✓ Look for a way out! Alternate routes and escapes.
- ✓ Ensure there is help and assistance if required.
- ✓ Listen to the Stunt Coordinator. He/she is the person who is qualified, experienced, and knows how to coordinate and perform this type of activity more than anyone else on the set, including the Fire Safety Officer.
- ✓ Listen for other comments from crewmembers or cast. They sometimes may see a hazard that the Stunt Coordinator or you may have missed.
- ✓ Listen for unusual sounds and noises that are uncommon.
- ✓ ASK QUESTIONS...there will be stunts or other activities that are completely unfamiliar to you, do not be afraid to ask, "Who is involved?" (performers) "What is going to happen?" "When is it going to happen?" "Where is it going to happen?" "Why is the stunt being performed in the prescribed method?" How does the stunt work, and how does it happen?"
- ✓ A safety meeting on the site shall precede performance of all stunts with all appropriate parties present.
- ✓ Be alert for sudden changes in plans, time running out, and pressure from the directors, which may have an adverse effect on the safety and planning of the stunt.
- ✓ All safety meetings should include a "walk thru" or "dry run", with all personnel involved. The meeting should include the intended action, possible deviations, and abort instructions, if necessary.
- ✓ Any changes by the director or stunt coordinator after the safety meeting will require another meeting to confirm everyone's understanding and agreement to said change(s).
- ✓ Stay alert, get involved, and understand how the stunt is performed.

Common Equipment, Gear, and Materials:

Air Ram - A mechanically operated catapult used to propel a stunt performer into the air. Frequently used during scenes with explosions to depict the performer getting blown up.

Air Bag - A large membrane/bag that is air-supported and specially designed to absorb the impact of a stuntman/stuntwoman when performing a high fall.

Body Burn - A stunt performer who is portraying a scene where the actor is on fire. Body burns shall be done under the supervision of an experienced stunt coordinator. Protective equipment such as stunt gels, nomex hoods, pants, shirts, and undergarments shall be worn. Stunt performers frequently use rubber cement as an ignitor fluid. A "Safety" shall be appropriately dressed, and have fire-extinguishing equipment to safeguard the performer.

Decelerator - A mechanical device that operates similar to a bungi cord, attached to a stuntman/stuntwoman, and used to decelerate the speed of the performer when conducting a high fall.

Pipe Ramp - A ramp manufactured and designed to roll a vehicle over on its side as the vehicle impacts the ramp. A single pipe that is supported by a steel frame and is angled upwards propels the vehicle.

Ratchet - A mechanical pulley system that employs a cable and harness apparatus, designed to jerk back the stunt performer when subjected to a scene that simulates an explosive charge, shotgun blast, or some other force.

Safety - A person who works with the stunt performer, usually another stunt performer. A Safety acts as a protective support to the performer. Frequently used when performing a stunt when the action may call for additional emergency support, such as a body burn, high fall, pipe ramp jump, etc.

Stunt Gel - A gel product developed to protect the skin of a stuntman/stuntwoman when performing a body burn. The gel should be generously applied to the skin when exposed to fire.

Summary:

Through a collective effort of examination, inspection, and coordination, the Fire Safety Officer, in conjunction with the Stunt Coordinator, will determine whether or not the stunt is safe.

This responsibility may have an enormous impact on the film production company. Any stunt that may possibly and unexpectedly injure, hurt, damage, or destroy any person, structure, or property should be considered as a life safety hazard, and should be discontinued, revised, or replanned so as not to affect the health and safety of those involved.